§ 431.107 Uniform test method for the measurement of energy efficiency of commercial heat pump water heaters. [Reserved]

ENERGY CONSERVATION STANDARDS

§ 431.110 Energy conservation standards and their effective dates.

Each commercial storage water heater, instantaneous water heater, unfired hot water storage tank and hot water supply boiler[1] must meet the applicable energy conservation standard level(s) as follows:

Product	Size	Energy conservation standard[a] (products manufactured on and after October 29, 2003)[b]	
		Minimum thermal efficiency	Maximum standby loss[c]
Electric storage water heaters.	All	N/A	$0.30 + 27/V_m$ (%/hr)
Gas-fired storage water heaters.	≤155,000 Btu/hr	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
	>155,000 Btu/hr	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Oil-fired storage water heaters.	≤155,000 Btu/hr	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
	>155,000 Btu/hr	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Gas-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Oil-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)

Product	Size	Minimum thermal insulation
Unfired hot water storage tank.	All	R–12.5

[a] V_m is the measured storage volume and V_r is the rated volume, both in gallons. Q is the nameplate input rate in Btu/hr.
[b] For hot water supply boilers with a capacity of less than 10 gallons: (1) the standards are mandatory for products manufactured on and after October 21, 2005, and (2) products manufactured prior to that date, and on or after October 23, 2003, must meet either the standards listed in this table or the applicable standards in subpart E of this part for a ''commercial packaged boiler.''
[c] Water heaters and hot water supply boilers having more than 140 gallons of storage capacity need not meet the standby loss requirement if (1) the tank surface area is thermally insulated to R–12.5 or more, (2) a standing pilot light is not used and (3) for gas or oil-fired storage water heaters, they have a fire damper or fan assisted combustion.

[69 FR 61983, Oct. 21, 2004; 69 FR 63574, Nov. 2, 2004]

Subpart H—Automatic Commercial Ice Makers

SOURCE: 70 FR 60415, Oct. 18, 2005, unless otherwise noted.

§ 431.131 Purpose and scope.

This subpart contains energy conservation requirements for commercial ice makers, pursuant to Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311–6317.

§ 431.132 Definitions concerning automatic commercial ice makers.

Automatic commercial ice maker means a factory-made assembly (not necessarily shipped in 1 package) that—

(1) Consists of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice; and

(2) May include means for storing ice, dispensing ice, or storing and dispensing ice.

Basic model means all units of a given type of covered product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially

[1] Any packaged boiler that provides service water, that meets the definition of ''commercial packaged boiler'' in subpart E of this part, but does not meet the definition of ''hot water supply boiler'' in subpart G, must meet the requirements that apply to it under subpart E.

identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

Cube type ice means ice that is fairly uniform, hard, solid, usually clear, and generally weighs less than two ounces (60 grams) per piece, as distinguished from flake, crushed, or fragmented ice.

Energy use means the total energy consumed, stated in kilowatt hours per one-hundred pounds (kWh/100 lb) of ice and stated in multiples of 0.1. For remote condensing automatic commercial ice makers, total energy consumed shall include condenser fan power.

Harvest rate means the amount of ice (at 32 degrees F) in pounds produced per 24 hours.

Ice-making head means automatic commercial ice makers that do not contain integral storage bins, but are generally designed to accommodate a variety of bin capacities. Storage bins entail additional energy use not included in the reported energy consumption figures for these units.

Maximum condenser water use means the maximum amount of water used by the condensing unit (if water-cooled), stated in gallons per 100 pounds (gal/100 lb) of ice, in multiples of 1.

Remote compressor means a type of automatic commercial ice maker in which the ice-making mechanism and compressor are in separate sections.

Remote condensing means a type of automatic commercial ice maker in which the ice-making mechanism and condenser or condensing unit are in separate sections.

Self-contained means a type of automatic commercial ice maker in which the ice-making mechanism and storage compartment are in an integral cabinet.

[70 FR 60415, Oct. 18, 2005, as amended at 71 FR 71371, Dec. 8, 2006; 76 FR 12503, Mar. 7, 2011]

TEST PROCEDURES

§ 431.133 Materials incorporated by reference.

(a) *General.* The Department incorporates by reference the following test procedures into subpart H of part 431. The Director of the Federal Register has approved the material listed in paragraph (b) of this section for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Any subsequent amendment to this material by the standard-setting organization will not affect the DOE test procedures unless DOE amends its test procedures. The Department incorporates the material as it exists on the date of the approval by the Federal Register and a notice of any change in the material will be published in the FEDERAL REGISTER.

(b) *Test procedures incorporated by reference.* (1) Air-Conditioning and Refrigeration Institute (ARI) Standard 810–2003, ''Performance Rating of Automatic Commercial Ice-Makers.''

(2) American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 29–1988 (RA 2005), ''Methods of Testing Automatic Ice Makers.''

(c) *Availability of references*—(1) *Inspection of test procedures.* The test procedures incorporated by reference are available for inspection at:

(i) National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030, or go to: *http://www.archives.gov/federal__register/code__of__federal__regulations/ibr__locations.html.*

(ii) U.S. Department of Energy, Forrestal Building, Room 1J–018 (Resource Room of the Building Technologies Program), 1000 Independence Avenue, SW., Washington, DC 20585–0121, (202) 586–9127, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

(2) *Obtaining copies of test procedures.* (i) Anyone can obtain a copy of ARI Standard 810–2003 from the Air-Conditioning and Refrigeration Institute, 4100 N. Fairfax Dr., Suite 200, Arlington, VA 22203 or *http://www.ari.org/std/standards.htm.*

(ii) Anyone can purchase a copy of ASHRAE Standard 29–1988 (RA 2005), ''Methods of Testing Automatic Ice Makers,'' from the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie